KING DESIGN®
Reliability & Communication Testing Instruments
KING DESIGN INDUSTRIAL CO., LTD.
VIBRATION LABORATORY
4F., NO. 1, Lane 270, Sec. 3, Beishen Road,
Shenkeng Dist., New Taipei City 222401, Taiwan, (R.O.C.)
TEL: 886-2-2662-5100 FAX: 886-2-2662-3094
http: //www.kdi.tw
http://www.vibration.com.tw
E-mail:service@kdi.tw

TESTING / INSPECTION REPORT

REPORT NO：VT-200519-1

COMPANY ：Apacer Technology Inc.
ADDRESS ：1F., No.32, Zhongcheng Rd., Tucheng Dist.,
New Taipei City 236, Taiwan (R.O.C.)
TEL ：886-2-2267-8000
FAX ：886-2-2267-2261
SPECIMEN ：SATA Flash Drive
DATE OF RECEIVED ：2020/05/11
DATE OF TESTED ：2020/05/13

TEST / INSPECTION ITEMS：Vibration / Shock

REMARKS：

- The laboratory is accredited by ISO/IEC 17025 General Requirements for the Competence of Calibration and Testing Laboratory.
- The results only apply to the device under test.
- This report is 26 pages, and no part of it may be abstracted or reproduced.

Test Engineer：Peter Pong	
Approval Signatory：David Lee 2020.5.22	Laboratory Head：Hsin Tai Chang

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TESTING / INSPECTION REPORT

TESTING EQUIPMENT：

1.Vibration Tester	：KING DESIGN KD-9363EM-600F2K-50N120, S/N：KDS11054986
2.Controller	：VCS-913+, S/N：1312384
3.Control Accelerometer	：Wilcoxon Research WR-777, S/N：4207
4.Shock Testing System	：KING DESIGN DP-1200-60, S/N：R2110086489
5.Controller	：DAS-105, S/N：263210255
6.Accelerometer	：B&K 4398, S/N：2209044
7.Shock Testing System	：KING DESIGN DP-1200-18, S/N：KDS02197998
8.Controller	：DAS-105, S/N：263210255
9.Accelerometer	：DYTRAN Model：3200B6 S/N：8594

TEST ENVIRONMENT：

Temperature	：25℃ (25±10℃)
Relative Humidity	：65% RH (50±25% RH)

SPECIMEN：

Model	：SX250-297
Quantity	：1 unit

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TEST SPECIFICATION(1)：

Comply with MIL-STD 810G 514.6 category 7

Random Vibration test (Non-Operating)

Frequency	：15 Hz to 2,000 Hz
Accelerate	：4.02 g rms
P.S.D.	：0.01 g^2/Hz (15Hz)
	0.01 g^2/Hz (105.94Hz)
	+6 dB/Oct (105.94Hz to 150Hz)
	0.02 g^2/Hz (150Hz)
	0.02 g^2/Hz (500Hz)
	-6 dB/Oct (500Hz to 2,000Hz)
	0.0013 g^2/Hz (2,000Hz)
Test Axis	：X, Y, Z axis
Test Time	：1 hr (Each axis)
Total Test Time	：3 hrs

TEST SPECIFICATION(2)：

Comply with MIL-STD 810G 514.6 category 24

Random Vibration test (Operating)

Frequency	：20 Hz to 2,000 Hz
Accelerate	：7.69 g rms
P.S.D.	：0.04 g^2/Hz (20Hz to 1,000Hz)
	：-6 dB/Oct (1,000Hz to 2,000Hz)
Test Axis	：X, Y, Z axis
Test Time	：1 hr (Each axis)
Total Test Time	：3 hrs

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TESTING / INSPECTION REPORT

TEST SPECIFICATION(3)：

Comply with MIL-STD-883K Method 2002.5

Wave Form ：Half sine wave (Non-Operating)
Acceleration ：1,500 g
Duration Time ：0.5 mS
No. of Shock ：Each axis 3 times
Shock Direction ：±X, ±Y, ±Z axis

TEST SPECIFICATION(4)：

Comply with MIL-STD-202G,Method 213B

Wave Form ：Half sine wave (Operating)
Acceleration ：50 g
Duration Time ：11 mS
No. of Shock ：Each axis 3 times
Shock Direction ：±X, ±Y, ±Z axis

TEST RESULT：

Describe	PASS	FAIL	Non-Judgment
Function judgment(1)	√	——	——
Appearance check(2)	√	——	——
(1)--Burn in function was normal after the test. (2)--No visible damages were found after the test.			

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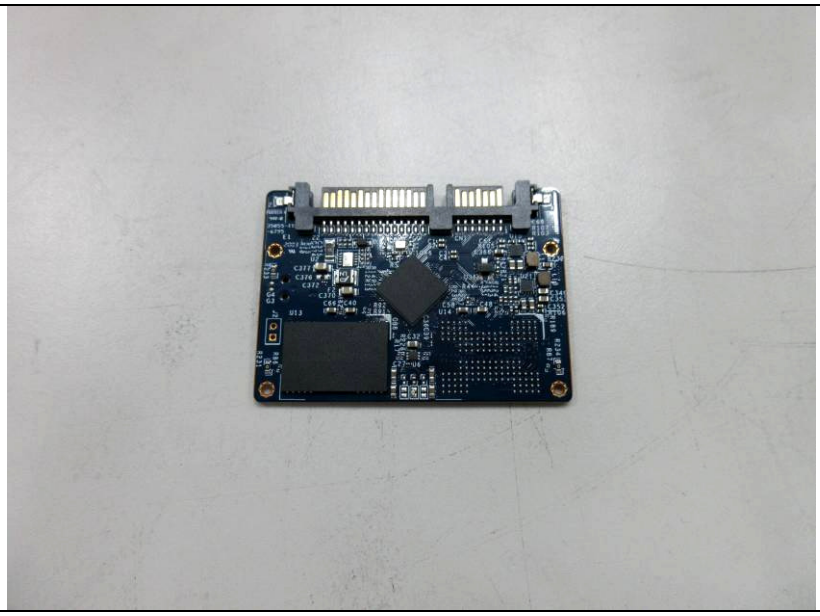
TESTING / INSPECTION REPORT

Sample photo before the test
Front

Back


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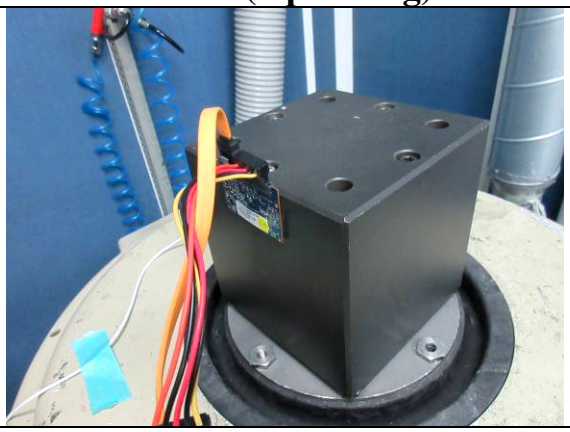
TESTING / INSPECTION REPORT

Vibration testing photos

X axis (Operating)	X axis (Non-Operating)
	
Y axis (Operating)	**Y axis (Non-Operating)**
	
Z axis (Operating)	**Z axis (Non-Operating)**
	

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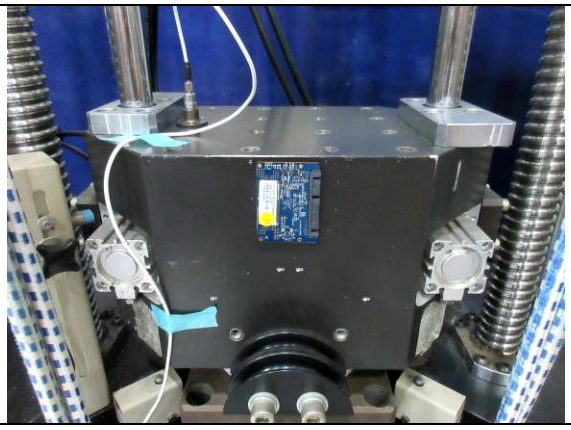
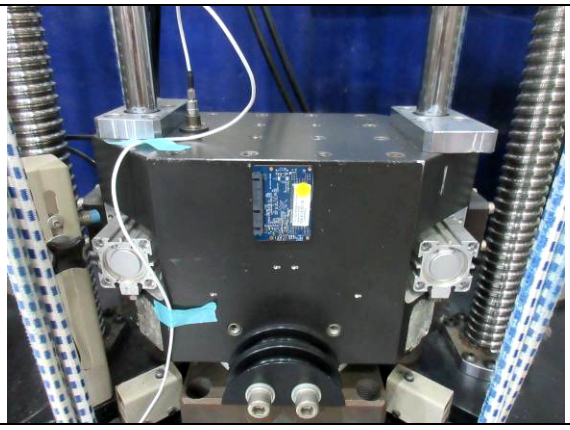
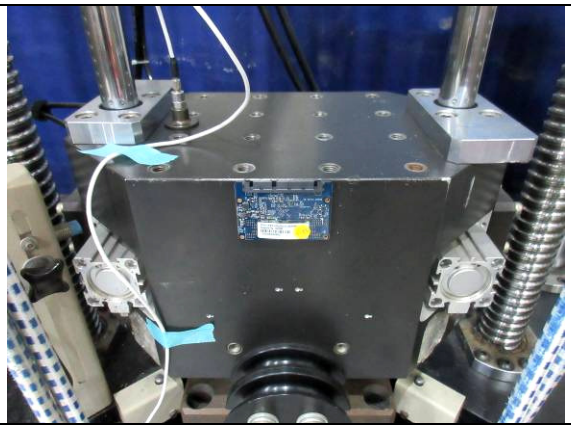
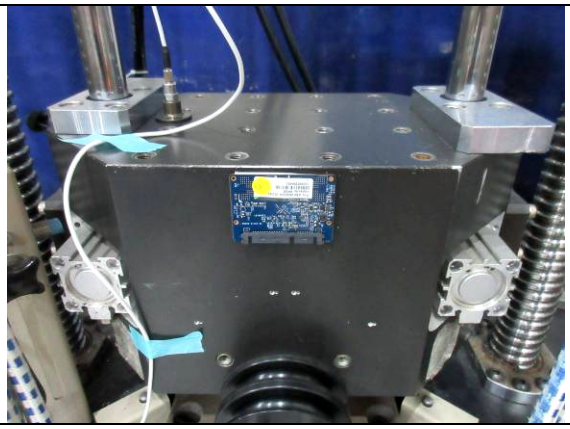
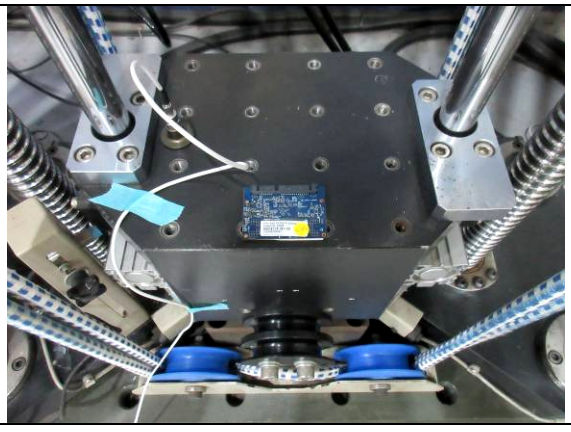
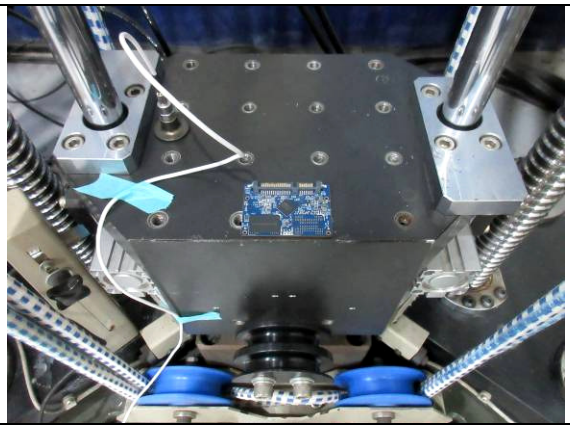
TESTING / INSPECTION REPORT

Shock testing photos (Non-operating)

+X axis	-X axis
	
+Y axis	**-Y axis**
	
+Z axis	**-Z axis**
	

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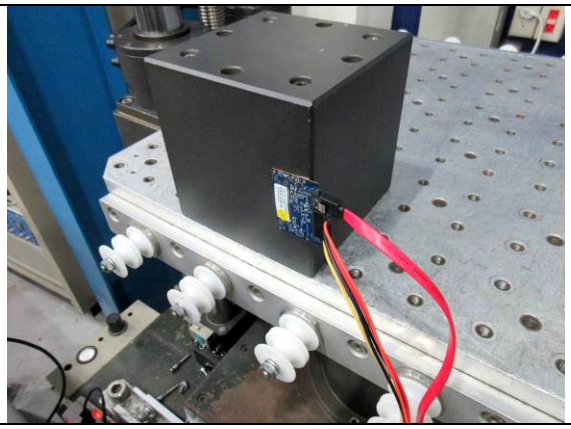
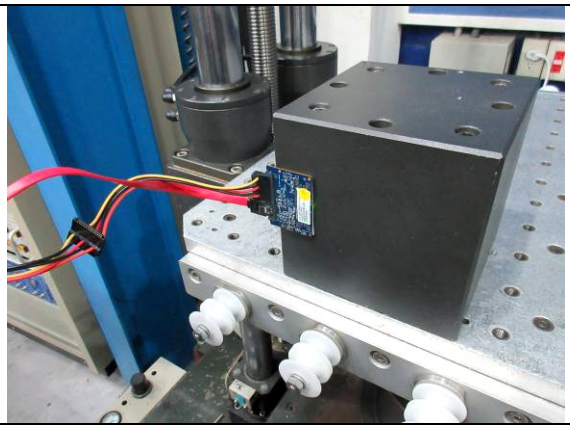
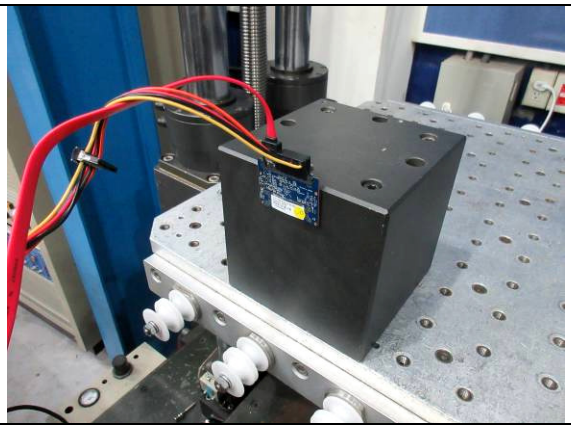
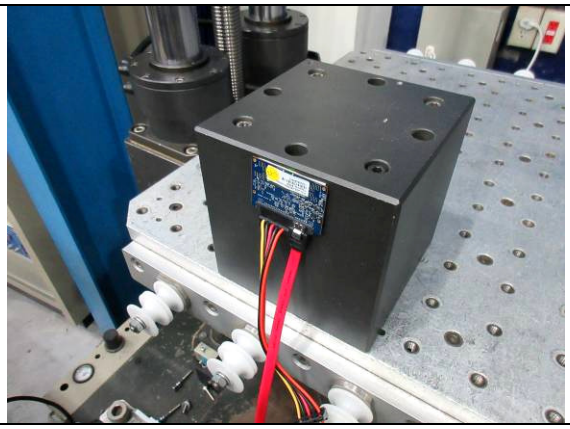
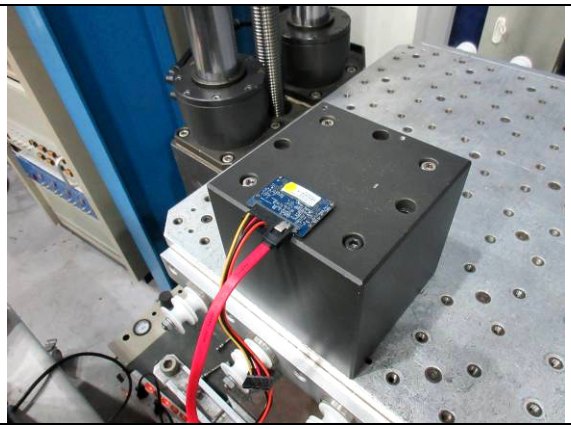
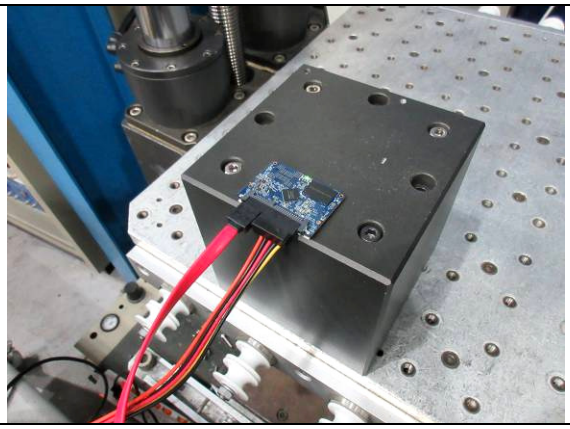
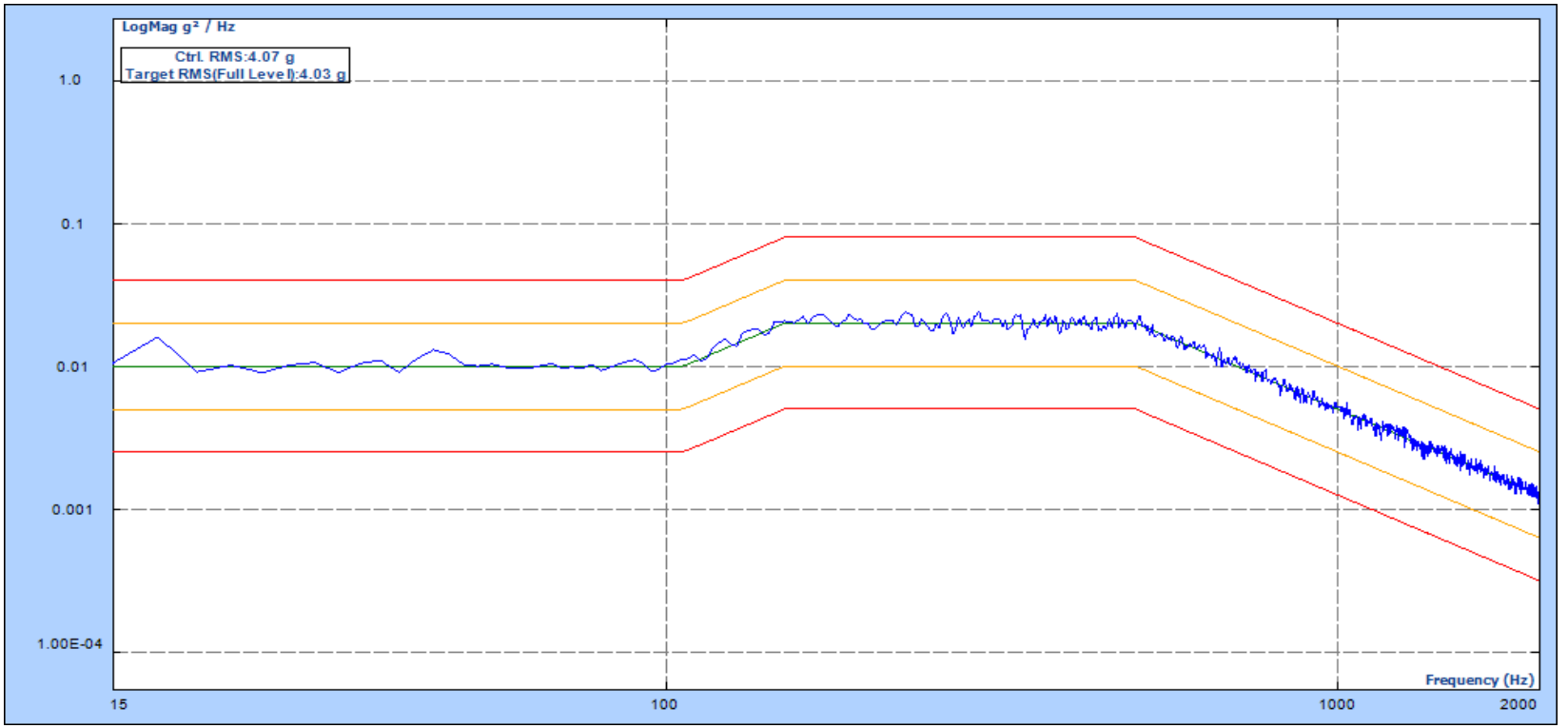
TESTING / INSPECTION REPORT

Shock testing photos (Operating)

+X axis	-X axis
	
+Y axis	**-Y axis**
	
+Z axis	**-Z axis**
	

X axis

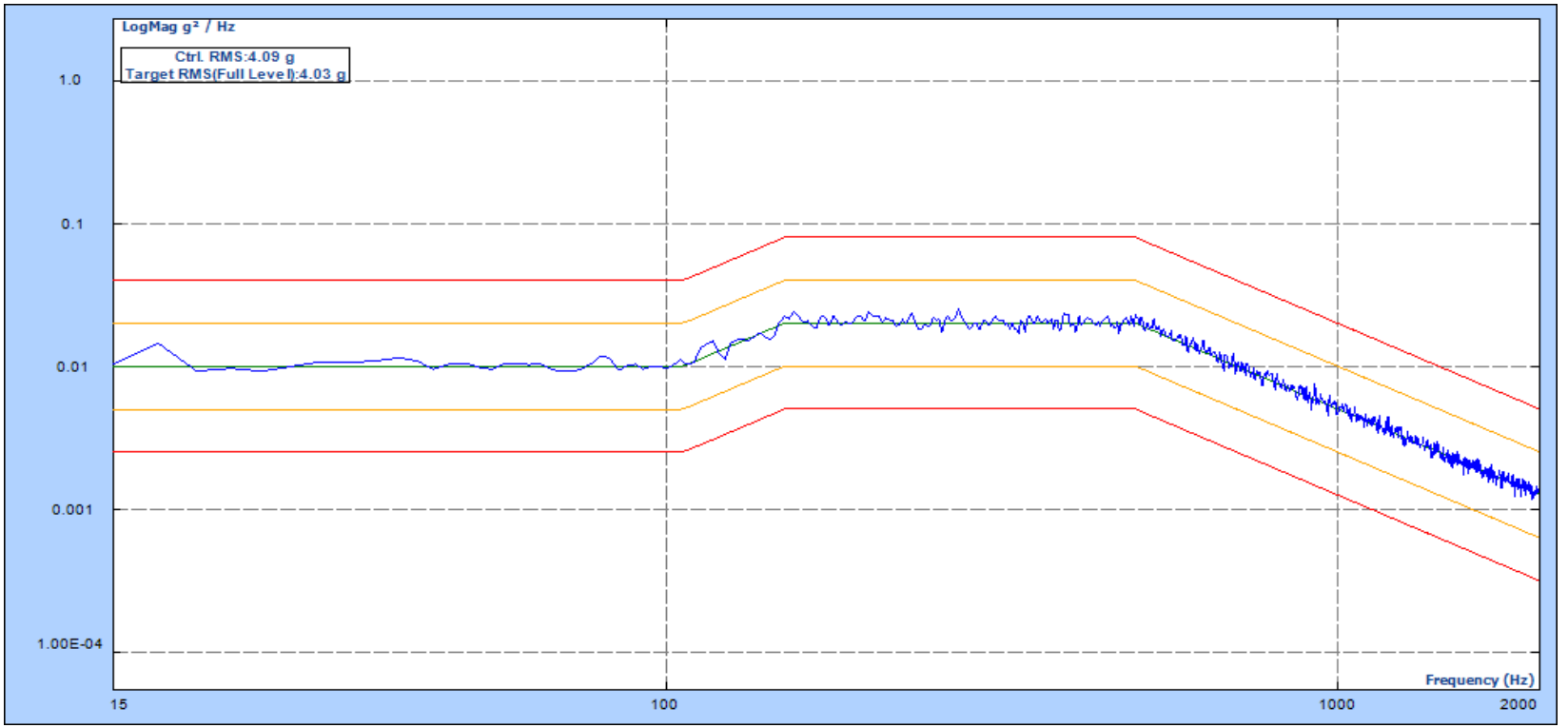


Level: 100.00 %
Velocity Pk: 136.6 mm/s
Remaining: 00:00:00

Drive Pk: 0.485V
Control RMS: 4.067 g
Total Elapsed: 01:01:01

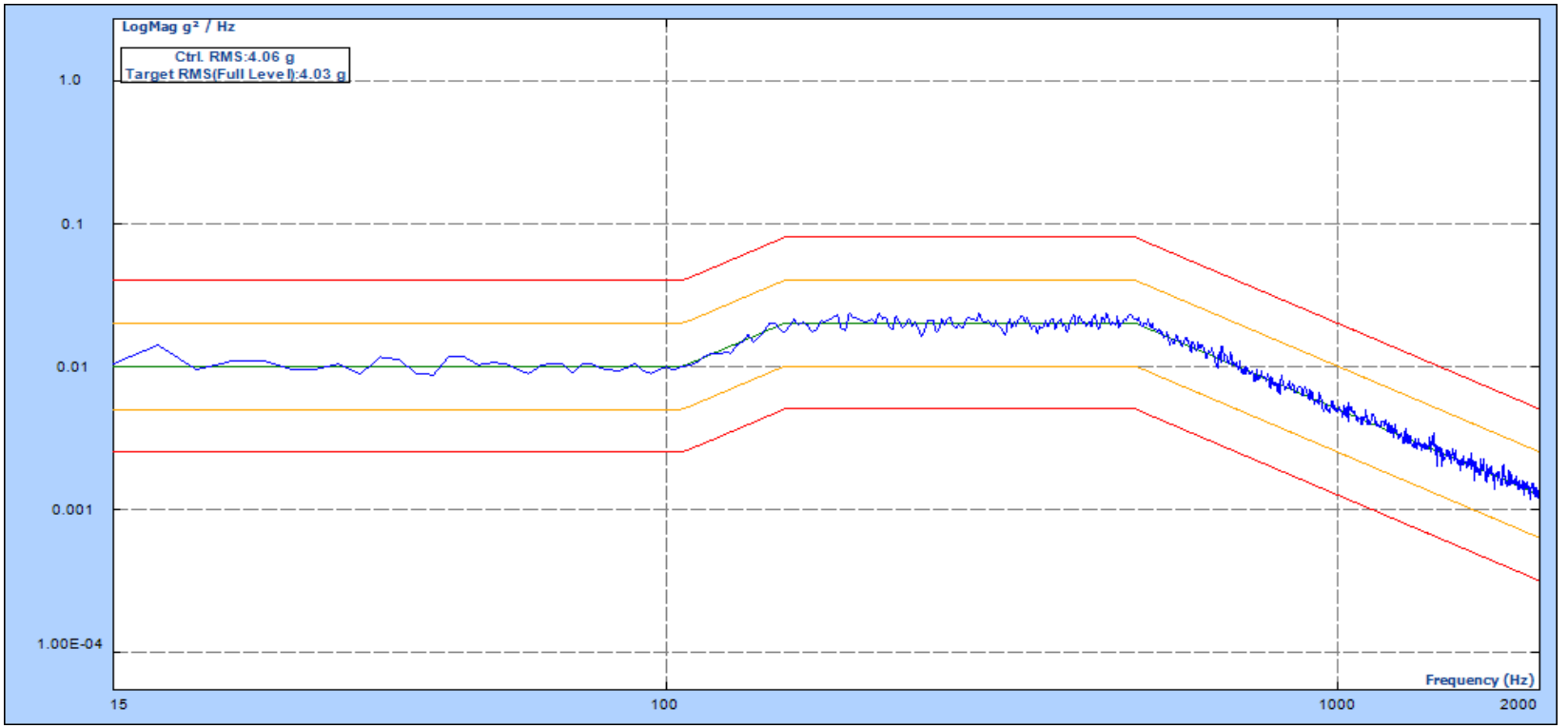
Est. Disp. : 1.805 mm Pk-Pk
Target RMS: 4.020 g
Full Level Elapsed: 01:00:00

Y axis



Level: 100.00 %
Drive Pk: 0.477V
Est. Disp. : 1.783 mm Pk-Pk
Velocity Pk: 135.7 mm/s
Control RMS: 4.085 g
Target RMS: 4.020 g
Remaining: 00:00:00
Total Elapsed: 01:01:01
Full Level Elapsed: 01:00:00

Z axis

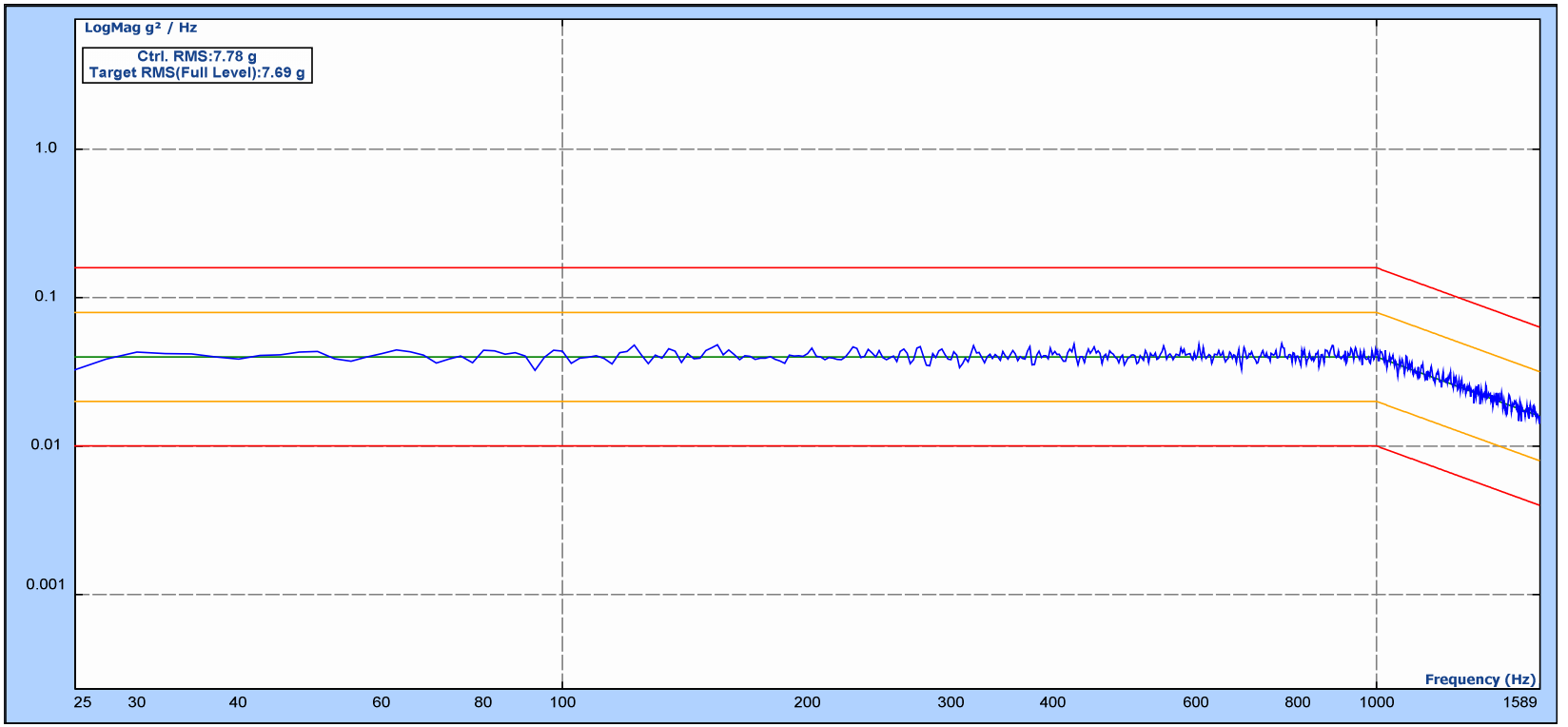


Level: 100.00 %
Velocity Pk: 135.6 mm/s
Remaining: 00:00:00

Drive Pk: 0.501V
Control RMS: 4.064 g
Total Elapsed: 01:01:01

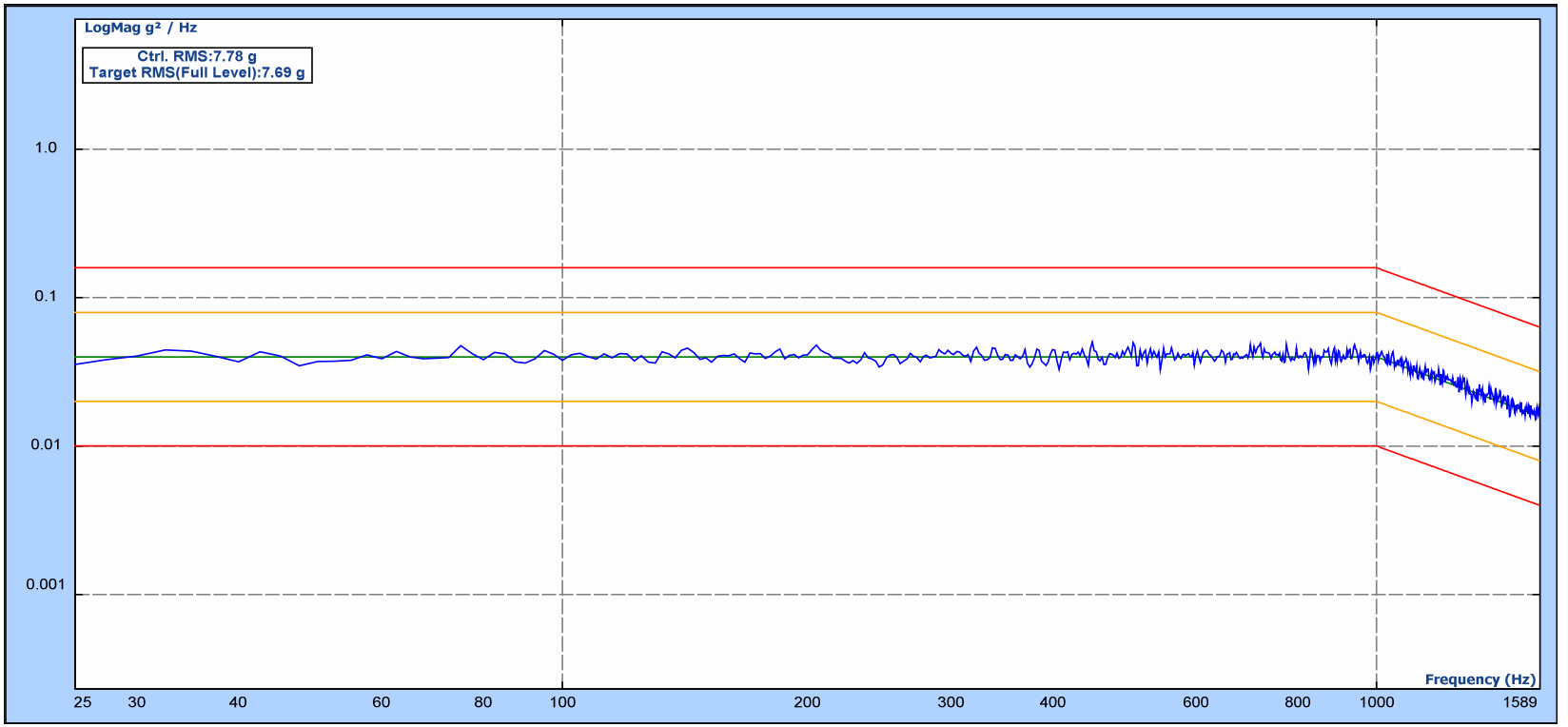
Est. Disp. : 1.790 mm Pk-Pk
Target RMS: 4.020 g
Full Level Elapsed: 01:00:00

X axis



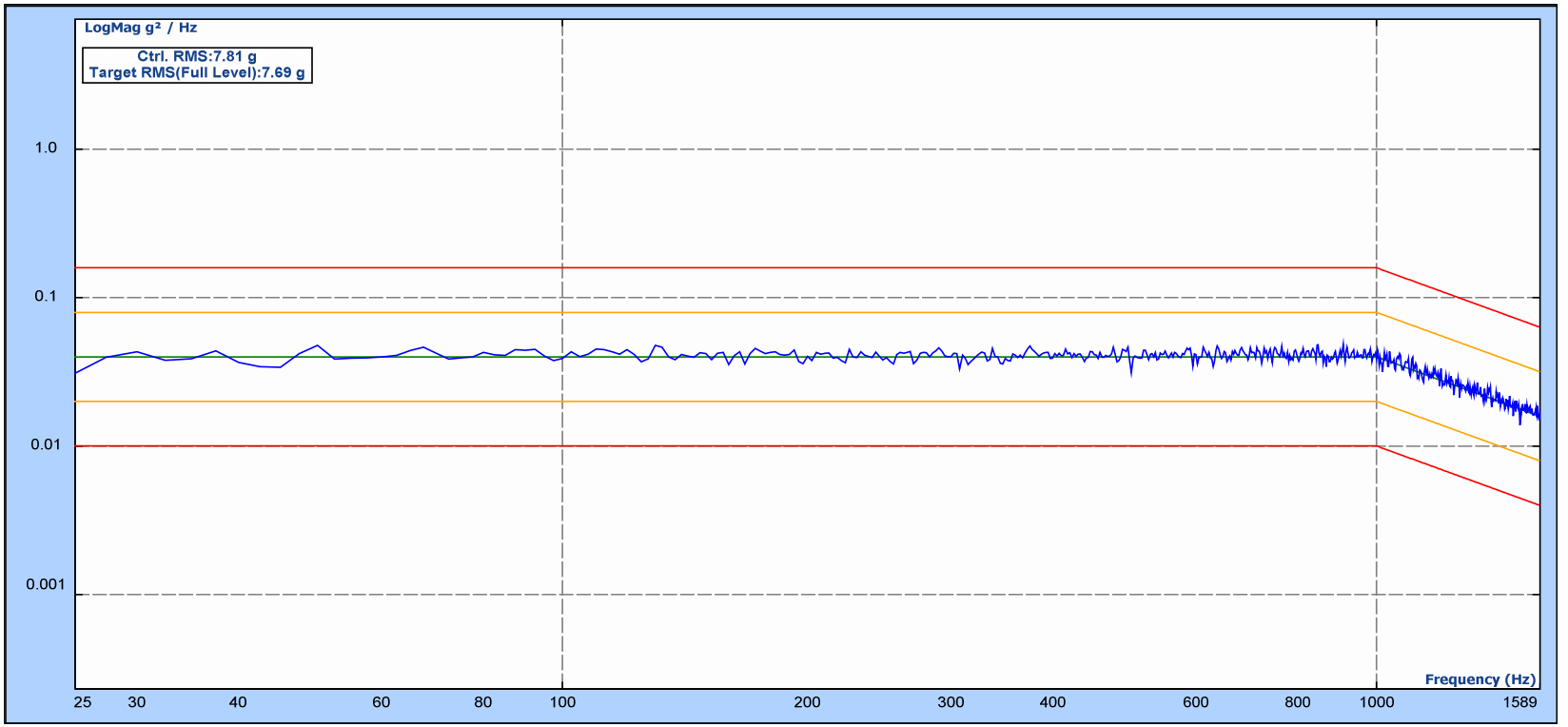
Level: 100.00 %
Drive Pk: 0.931V
Est. Disp. : 2.263 mm Pk-Pk
Velocity Pk: 222.7 mm/s
Control RMS: 7.779 g
Target RMS: 7.690 g
Remaining: 00:00:00
Total Elapsed: 01:01:03
Full Level Elapsed: 01:00:00

Y axis



Level: 100.00 %
Drive Pk: 0.942V
Est. Disp. : 2.218 mm Pk-Pk
Velocity Pk: 220.7 mm/s
Control RMS: 7.784 g
Target RMS: 7.690 g
Remaining: 00:00:00
Total Elapsed: 01:01:03
Full Level Elapsed: 01:00:00

Z axis



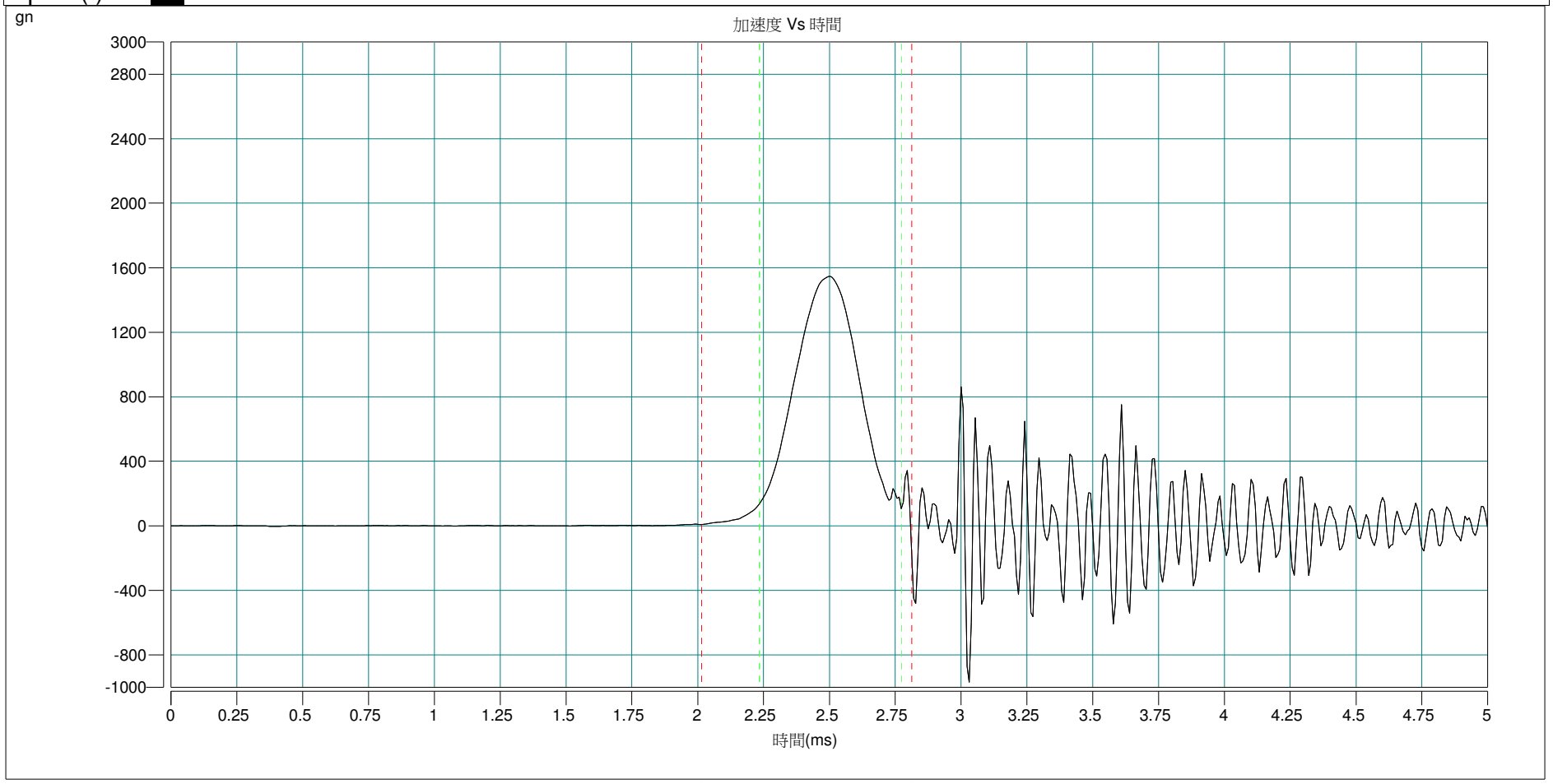
Level: 100.00 %
Velocity Pk: 219.7 mm/s
Remaining: 00:00:00

Drive Pk: 0.846V
Control RMS: 7.807 g
Total Elapsed: 01:01:03

Est. Disp. : 2.199 mm Pk-Pk
Target RMS: 7.690 g
Full Level Elapsed: 01:00:00

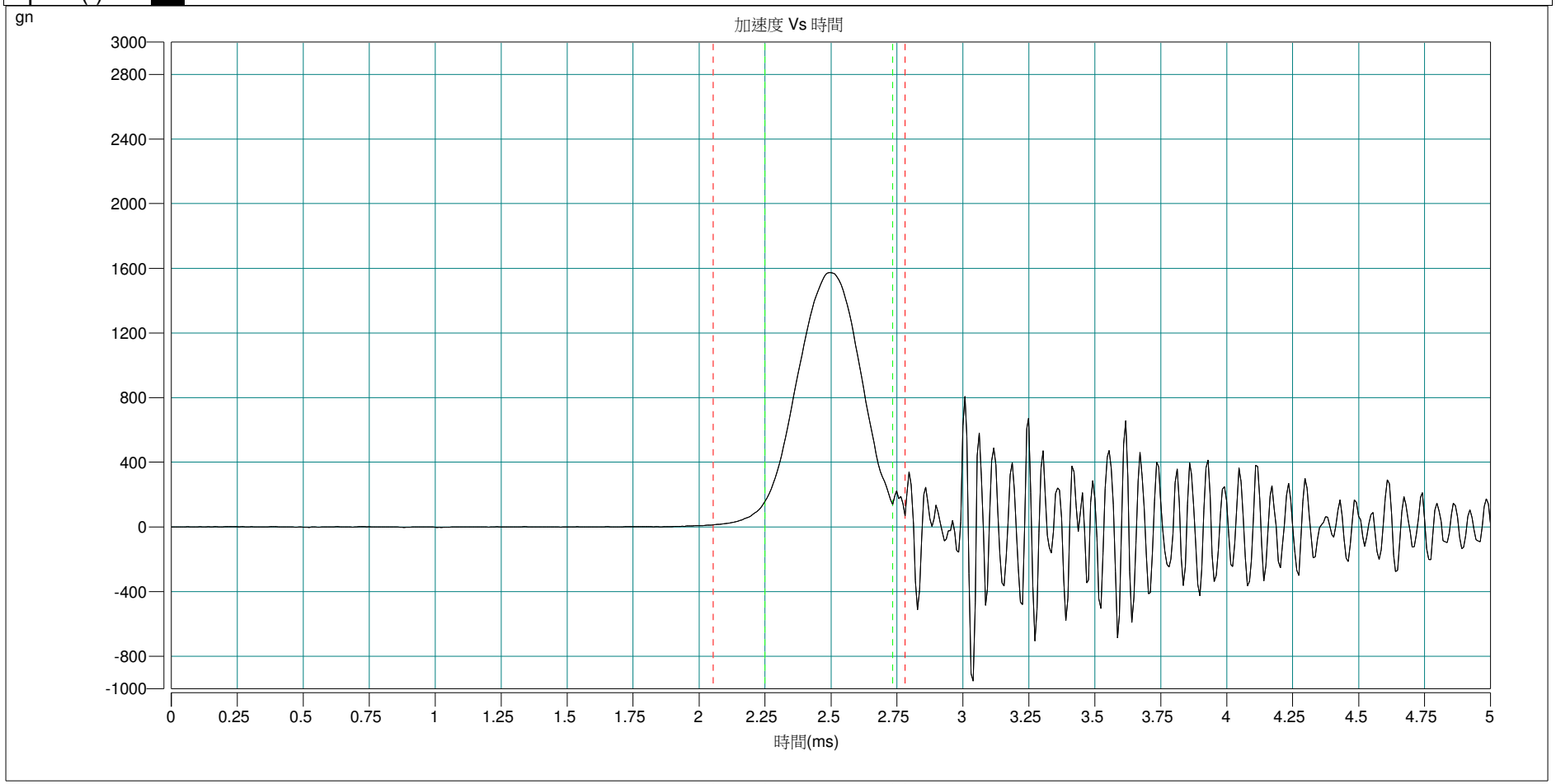
+X axis

Signal		Acceleration (gn)	Duration (ms)	Velocity (In/s)	Filter (Hz)	Max Acc (gn)	Min Acc (gn)
Input1(t)	■	1548.17	0.53	4.55	10000.00	1548.17	-969.05



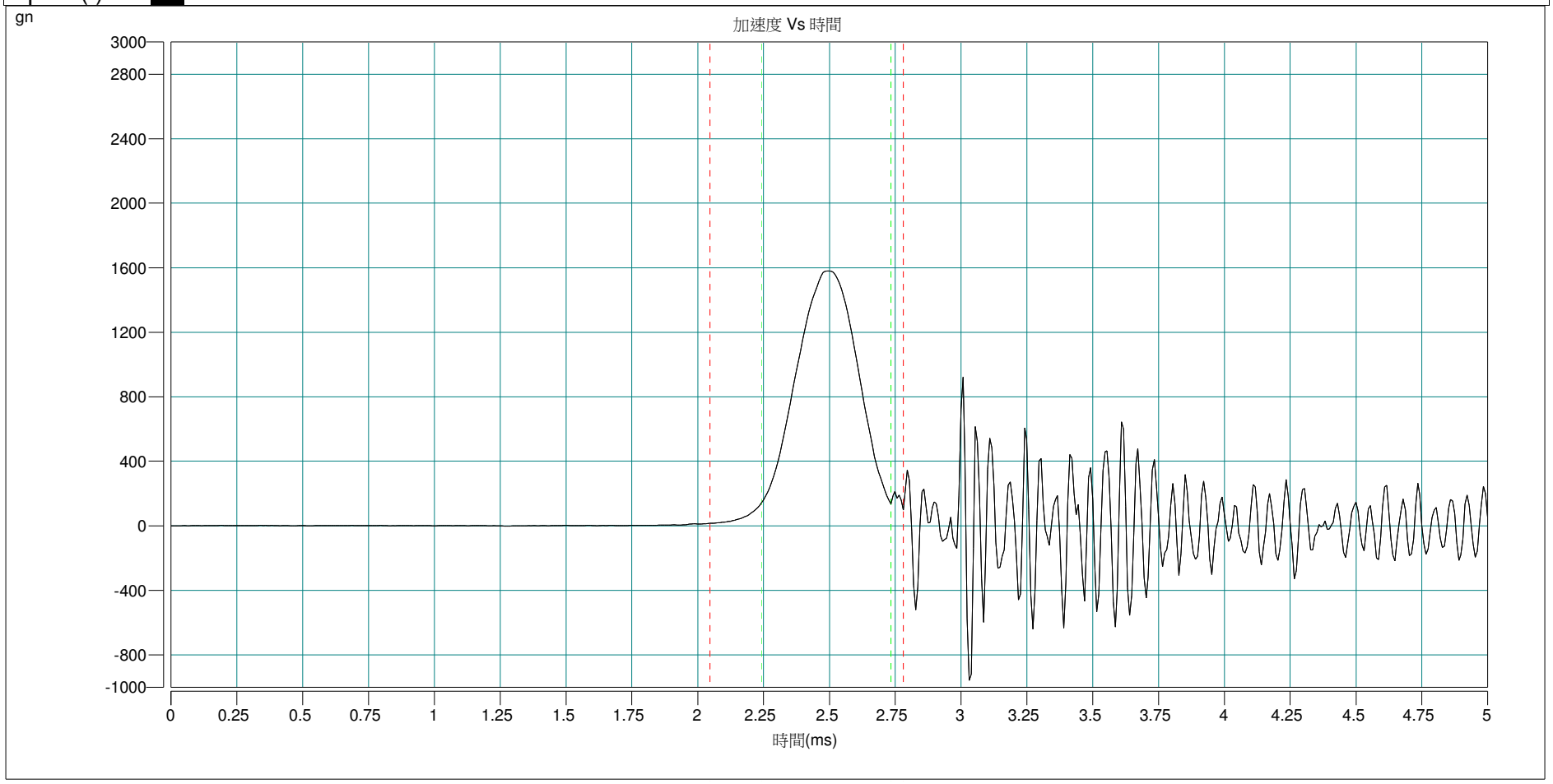
-X axis

Signal		Acceleration (gn)	Duration (ms)	Velocity (In/s)	Filter (Hz)	Max Acc (gn)	Min Acc (gn)
Input1(t)	■	1574.56	0.51	4.50	10000.00	1574.56	-954.14



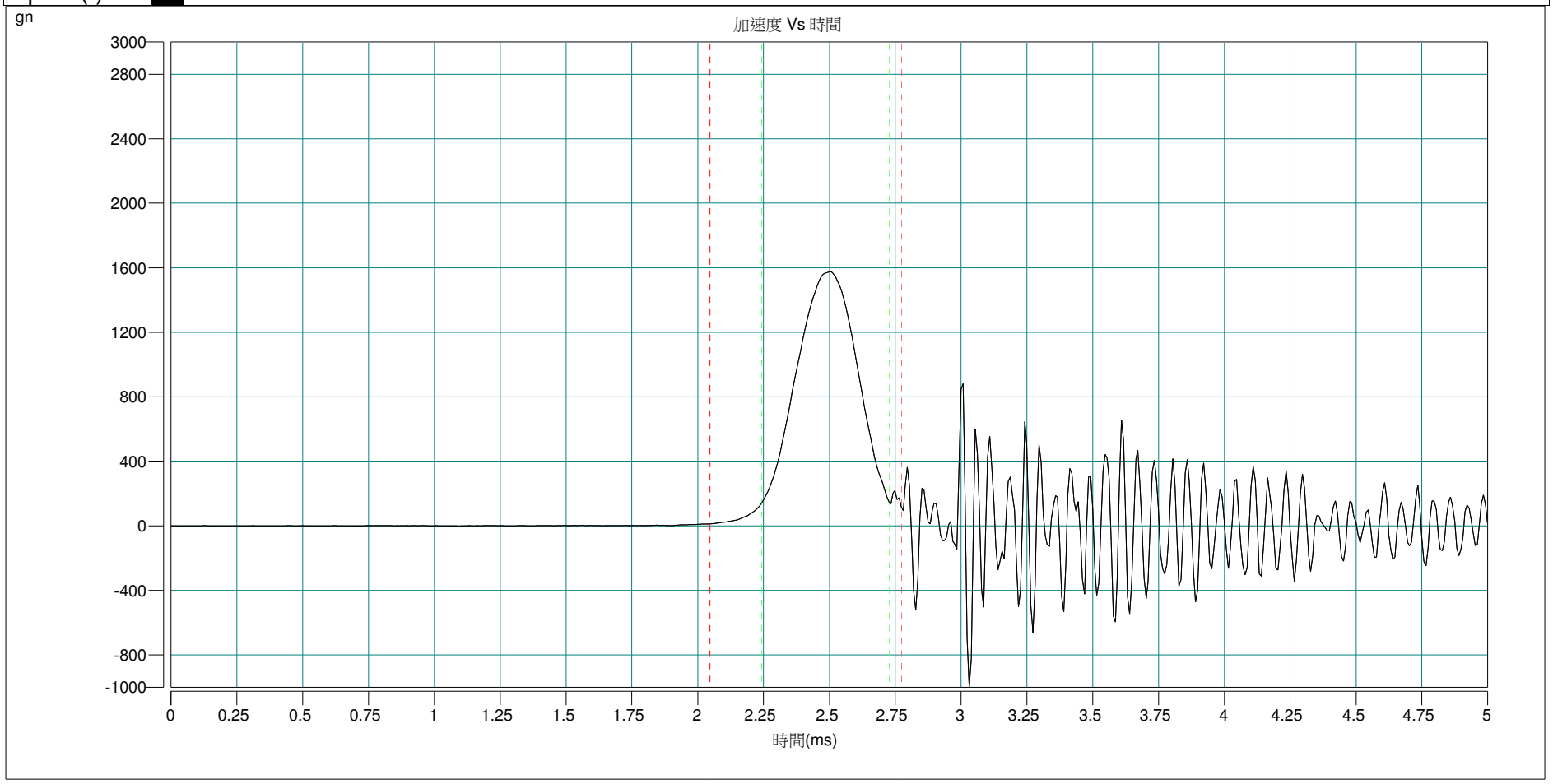
+Y axis

Signal		Acceleration (gn)	Duration (ms)	Velocity (In/s)	Filter (Hz)	Max Acc (gn)	Min Acc (gn)
Input1(t)	■	1579.93	0.51	4.52	10000.00	1579.93	-959.02



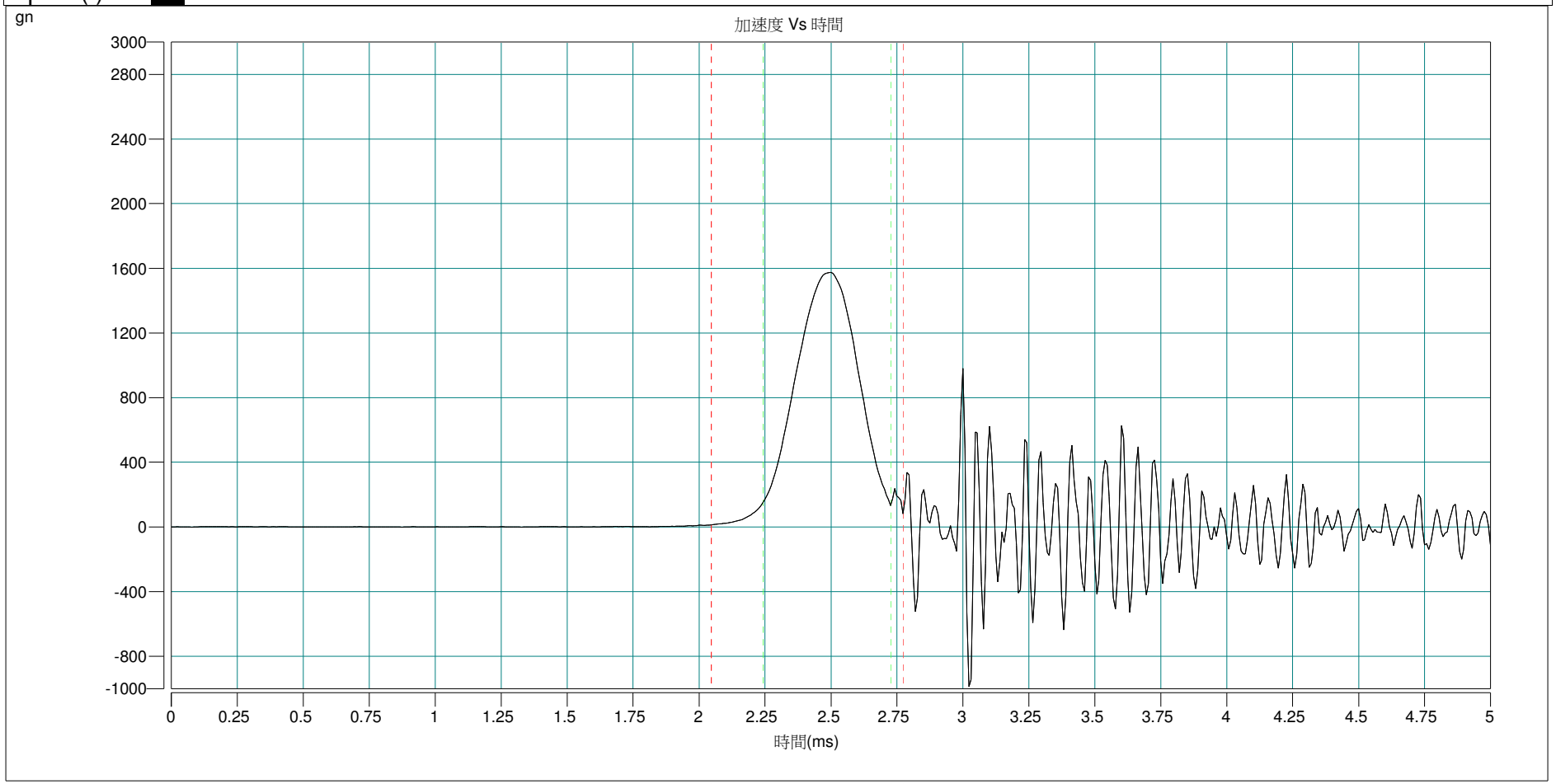
-Y axis

Signal		Acceleration (gn)	Duration (ms)	Velocity (In/s)	Filter (Hz)	Max Acc (gn)	Min Acc (gn)
Input1(t)	■	1576.17	0.52	4.48	10000.00	1576.17	-1001.12



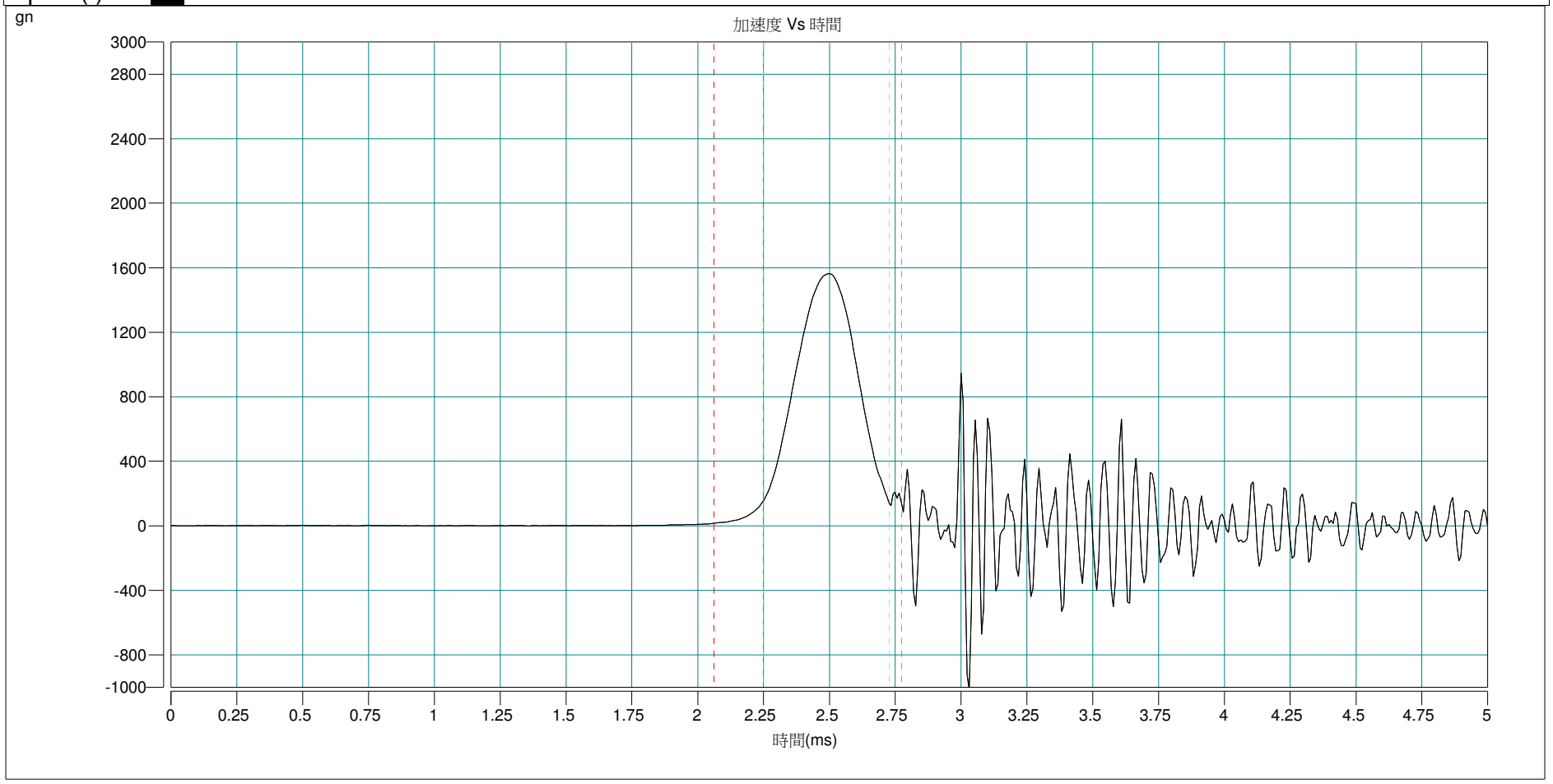
+Z axis

Signal		Acceleration (gn)	Duration (ms)	Velocity (In/s)	Filter (Hz)	Max Acc (gn)	Min Acc (gn)
Input1(t)	■	1575.99	0.49	4.49	10000.00	1575.99	-987.45



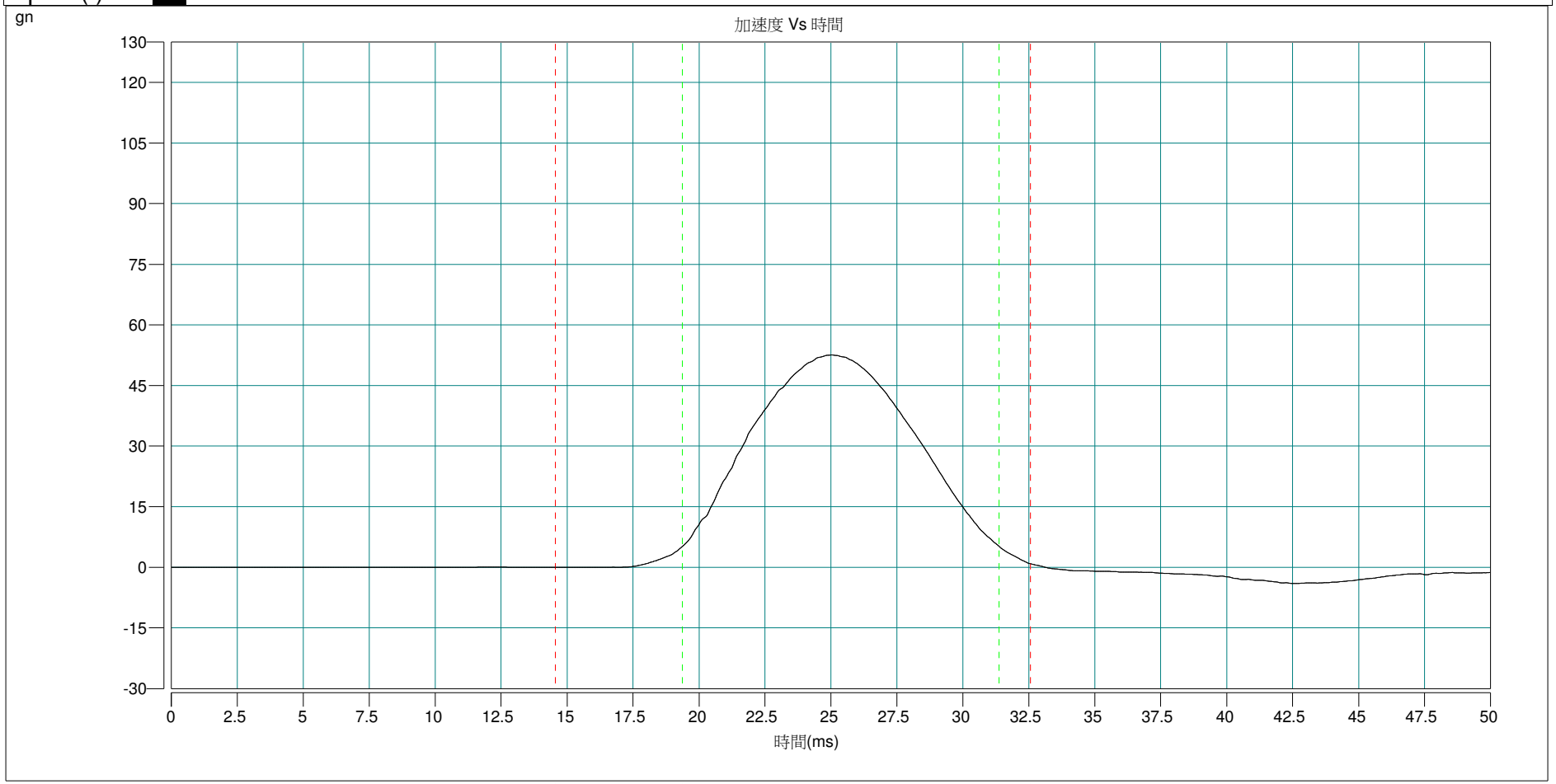
-Z axis

Signal		Acceleration (gn)	Duration (ms)	Velocity (In/s)	Filter (Hz)	Max Acc (gn)	Min Acc (gn)
Input1(t)	■	1564.03	0.51	4.45	10000.00	1564.03	-1019.20



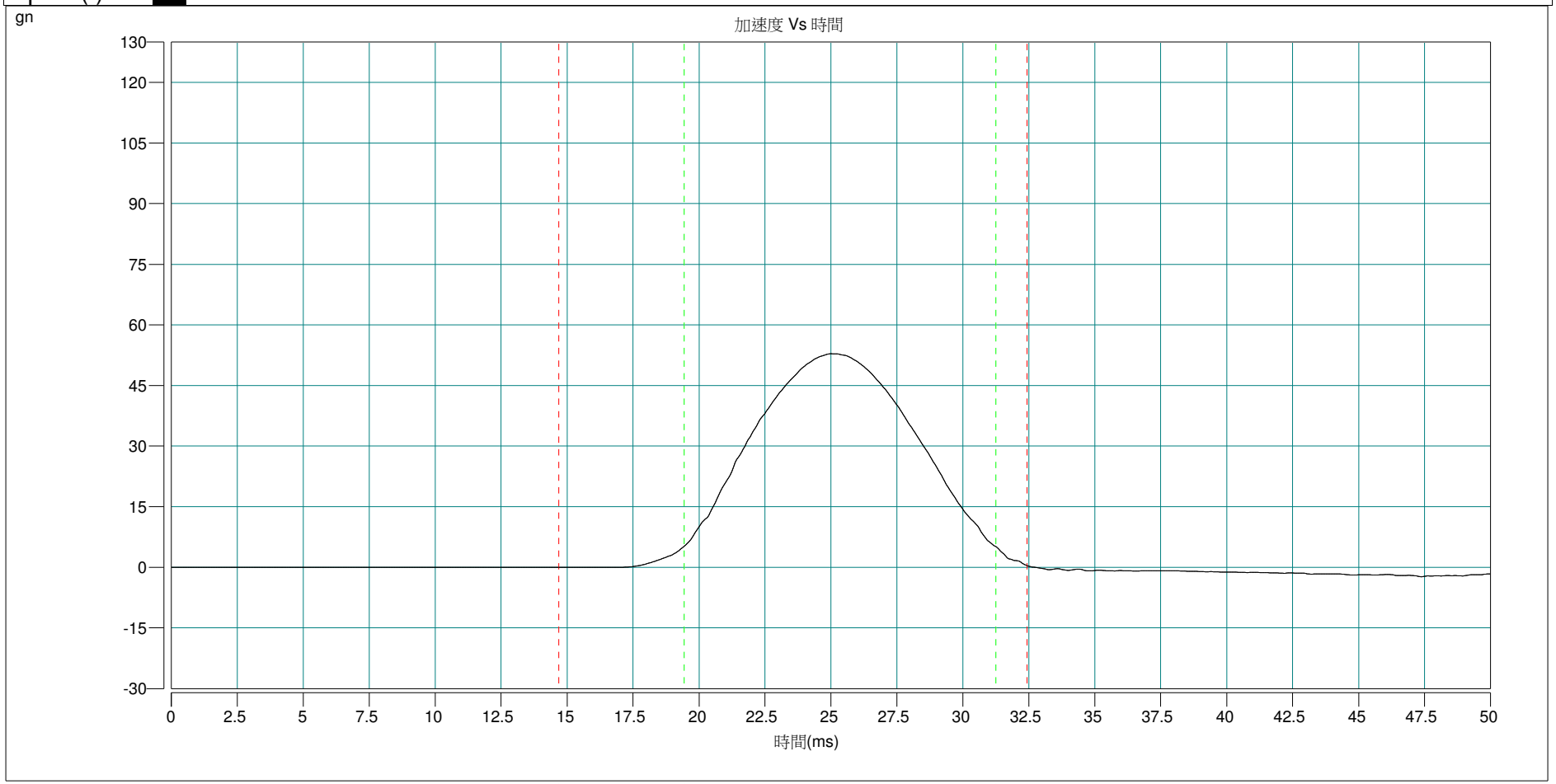
+X axis

Signal		Acceleration (gn)	Duration (ms)	Velocity (In/s)	Filter (Hz)	Max Acc (gn)	Min Acc (gn)
Input1(t)	■	52.59	11.98	3.87	500.00	52.59	-3.98



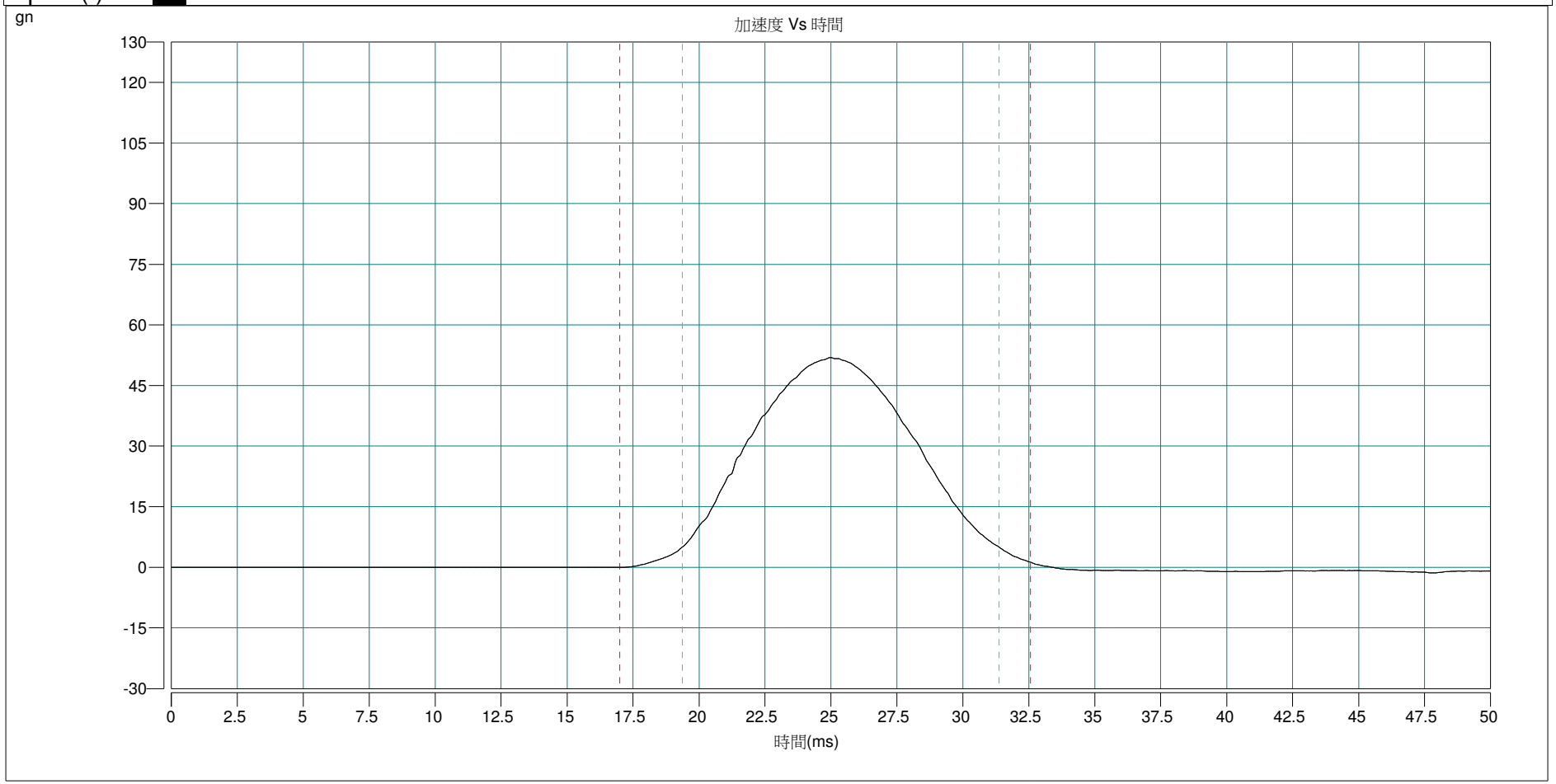
-X axis

Signal		Acceleration (gn)	Duration (ms)	Velocity (In/s)	Filter (Hz)	Max Acc (gn)	Min Acc (gn)
Input1(t)	■	52.90	11.77	3.83	500.00	52.90	-2.33



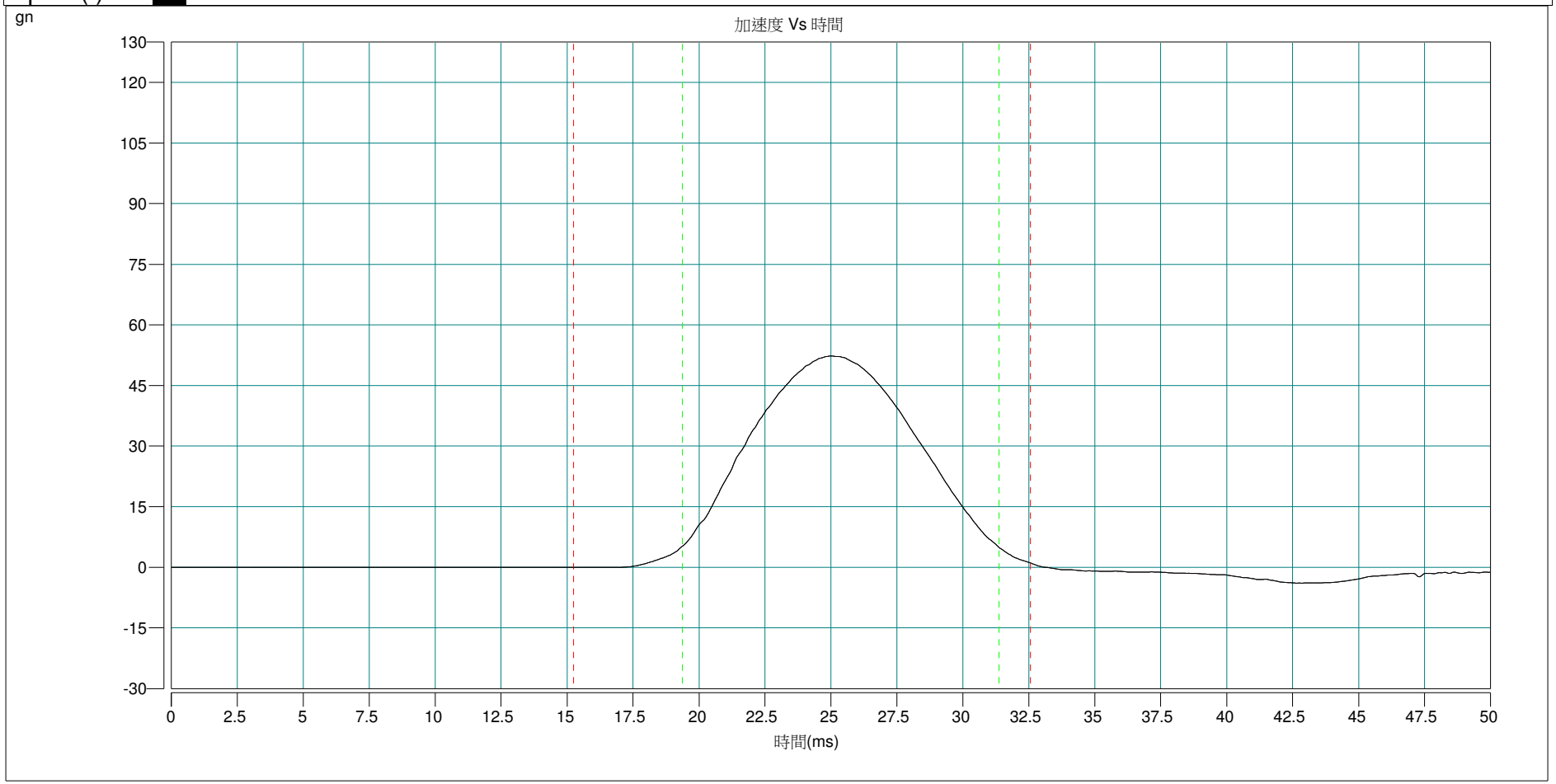
+Y axis

Signal		Acceleration (gn)	Duration (ms)	Velocity (In/s)	Filter (Hz)	Max Acc (gn)	Min Acc (gn)
Input1(t)	■	51.95	11.94	3.74	500.00	51.95	-1.34



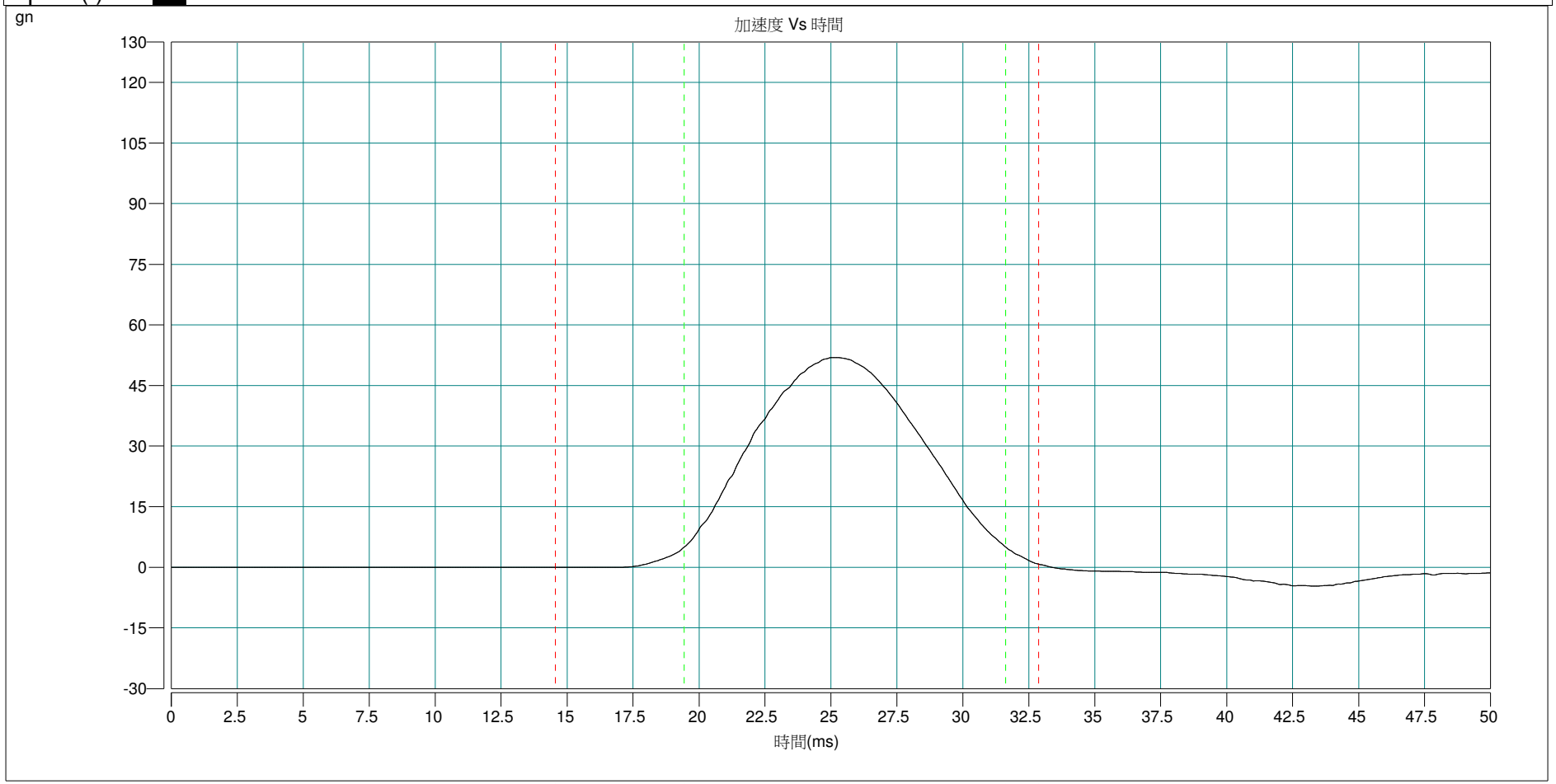
-Y axis

Signal		Acceleration (gn)	Duration (ms)	Velocity (In/s)	Filter (Hz)	Max Acc (gn)	Min Acc (gn)
Input1(t)	■	52.31	11.95	3.84	500.00	52.31	-3.91



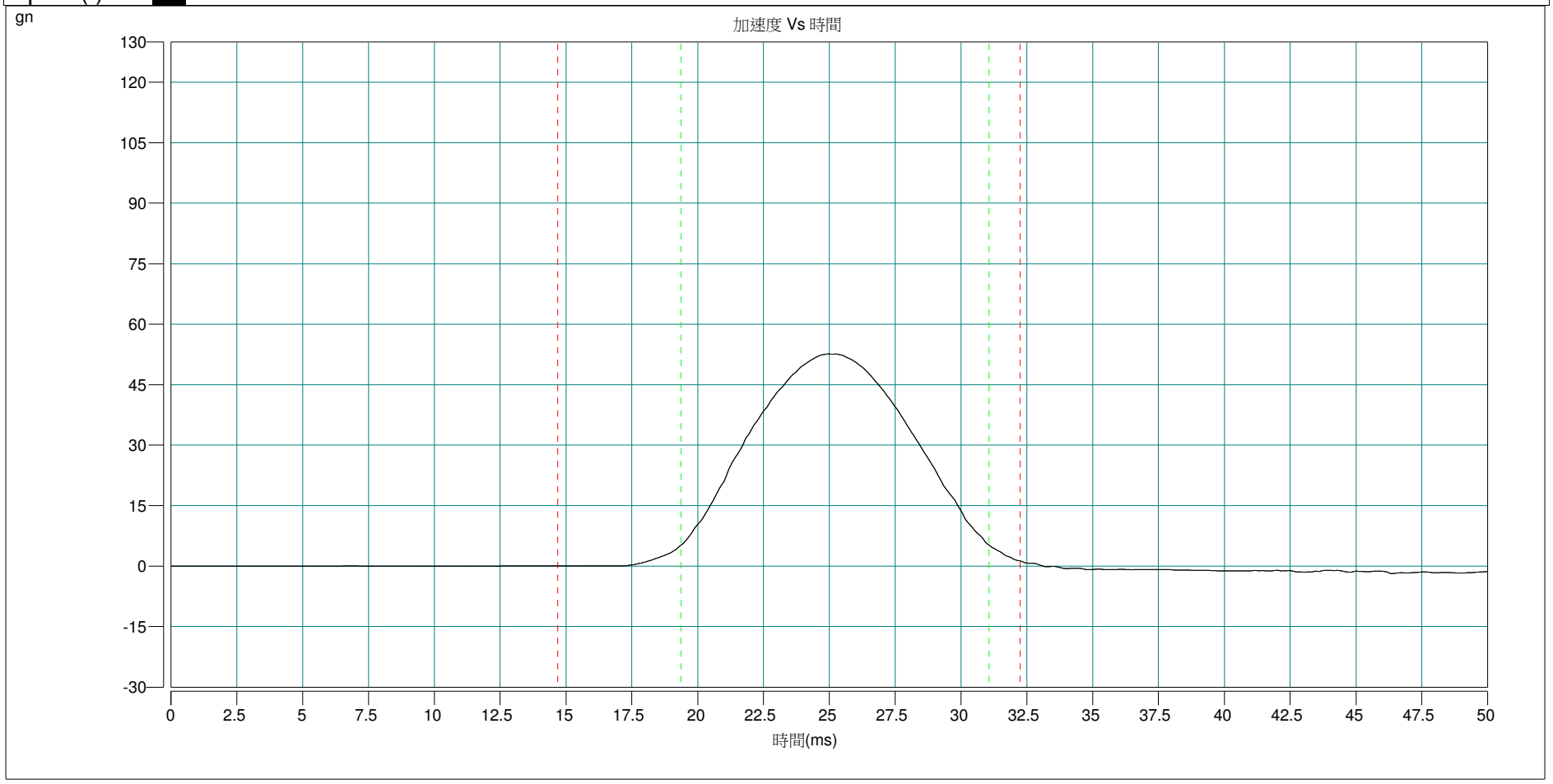
+Z axis

Signal		Acceleration (gn)	Duration (ms)	Velocity (In/s)	Filter (Hz)	Max Acc (gn)	Min Acc (gn)
Input1(t)	■	51.95	11.73	3.86	500.00	51.95	-4.64



-Z axis

Signal		Acceleration (gn)	Duration (ms)	Velocity (In/s)	Filter (Hz)	Max Acc (gn)	Min Acc (gn)
Input1(t)	■	52.66	11.66	3.81	500.00	52.66	-1.82



-END-